Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	
	)	
Implementation of Sections 309(j) and 337 Of the Communications Act of 1934 as Amended	)	WT Docket 99-87
	)	
	)	RM-9332
Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies	)	

COMMENTS OF THE NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL

The National Public Safety Telecommunications Council ("NPSTC") submits these comments in response to the Commission's *Third Further Notice of Proposed Rulemaking* addressing the Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies.[1]

The role of NPSTC is to serve as a resource and advocate for the over 74,000 public safety organizations in the United States on matters relating to public safety communications. NPSTC is a federation of public safety associations that have dedicated its collective voice to encouraging and facilitating the implementation of the Public Safety Wireless Advisory Committee (PSWAC) and the 700 MHz Public Safety National Coordination Committee (NCC) recommendations. NPSTC explores technologies and public policies involving public safety agencies, analyzes the ramifications of particular issues, and submits comments to governmental bodies with the objective of furthering

[1] In the Matter of Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended and Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, *Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order*, WT Docket 99-87, RM -9332, 29 FCC Rcd 25045 (December 23, 2004)

public safety communications worldwide. NPSTC serves as a standing forum for the exchange of ideas and information for effective public safety telecommunications. The following 13 organization participate in NPSTC[2]:

American Association of State Highway and Transportation Officials
American Radio Relay League
American Red Cross
Association of Public Safety Communications Officials-International
Forestry Conservation Communications Association
International Association of Chiefs of Police
International Association of Emergency Managers
International Association of Fire Chiefs
International Association of Fish and Wildlife Agencies
International Municipal Signal Association
National Association of State Emergency Medical Services Directors
National Association of State Telecommunications Directors
National Association of State Foresters

BACKGROUND

This proceeding addresses the Commission's continuing effort to promote migration to narrowband technology in the private land mobile radio (PLMR) services. In its December 2004 decision, it established a January 1, 2013 deadline for migration to 12.5 KHz technology, or a technology that achieves the narrowband equivalent, for both public safety users and licensees in the Industrial/Business category using frequencies in the 150-174 MHz and 421-512 MHz bands.

The Commission's decision also established interim transition dates. Applications for new operations using 25 KHz channels will be accepted until January 1, 2011. After January 1, 2011, applications for new operations using a bandwidth greater than 12.5 KHz will be accepted only if the equipment meets the new spectrum efficiency standard of one channel per

[2] Several Federal agencies are liaison members of NPSTC and active participants in its ongoing efforts. These include the Department of Agriculture, Department of Homeland Security (SAFECOM Program and Federal Emergency Management Agency), Department of the Interior and the Department of Justice (National Institute of Justice, CommTech Program).

12.5 KHz of channel bandwidth (voice) or 4800 bits per second per 6.25 KHz (data). Applications for modification of operations that expand the authorized contour of an existing station using 25 KHz channels will be accepted until January 1, 2011. After January 1, 2011, applications for modification of operations expanding the authorized contour of an existing station will be accepted only if the equipment meets the new spectrum efficiency standard. Manufacture and importation of any 150-174 MHz and 421-512 MHz band equipment operating on a channel bandwidth up to 25 KHz will be permitted until January 1, 2011. After January 1, 2011, manufacture and importation of any 150-174 MHz and 421-512 MHz band equipment operating on a channel bandwidth greater than 12.5 KHz will be accepted only if it meets the new spectrum efficiency standard.

In its *Further Notice*, the Commission requests additional comment regarding what actions should be pursued to facilitate the migration to 6.25 KHz operations and whether a mandatory date should be established. It also requests comment on a transition aspect of a current rule intended to foster movement to 6.25 KHz technology. This rule requires that applications for equipment certification received on or after January 1, 2005 be granted only if the equipment either (1) is capable of operating on 6.25 KHz channels, or (2) the equipment meets a narrowband efficiency standard, *i.e.*, one channel per 6.25 KHz (voice) or 4800 bits per second per 6.25 KHz (data).[3]

NPSTC opposes a mandatory date for transitioning to 6.25 KHz and believes that the current transition rule addressing equipment certification is counter to the interests of public safety communications. NPSTC believes that establishing a mandatory date

[3] *See* 47 C.F.R. § 90.203(j) (4)-(5).

would be counterproductive to the Commission's objective and that interoperability capability will be undermined because significant challenges remain with regard to the 12.5 KHz transition, and there is no knowledge of when equipment for the public safety sector will be available.

The Transition to 12.5 KHz Remains a Substantial Challenge That Will Be Worsened by Establishing A Rigid Date for the Transition to 6.25 KHz.

Adoption of a specific date when public safety agencies must operate with 6.25 KHz technologies ignores the substantial challenge to public safety communications presently imposed by the transition to 12.5 KHz. A mandatory date will further disrupt the ability of agencies to make these initial changes. It will undermine the commitment in planning, resources, construction, and implementation needed to effectuate such a major shift.

NPSTC embraces the Commission mandate that systems comport with 12.5 KHz technology by January 1, 2013. This date provides a reasonable time to plan, obtain the necessary resources, and otherwise meet the objective. Underlying this finite date of January 1, 2013 are transitional provisions that preclude modification of systems or manufacture of equipment, as early as January 1, 2011. These requirements will continue to present significant operational and logistical challenges to public safety agencies. A finite date mandating yet another transition to an even narrower bandwidth raises the specter of even more expense and resources in a sector where equipment cycles are already lengthy. A mandatory date for 6.25 KHz will considerably undermine the Commission's objective to complete what is necessary to transition to 12.5 KHz.

Under the Commission's December 2004 Order, neither a modification to expand

the contour of an existing station nor the manufacturing or importation of equipment may take place unless the equipment comports with 12.5 KHz technology. The rules ignore the realities that the geographic areas of public safety agencies can change infrequently and that agencies cannot wait 2 years to purchase replacement equipment.

It is not a unique circumstance for a public safety agency to expand or change the geographic area for which it is responsible. Areas are annexed, subdivisions are constructed, educational facilities expanded, sports and entertainment centers are built, and operations consolidated. These changes call for altering, and in many cases, expanding personnel and other resources to provide coverage and response capability to a new area. These are decisions that should emanate from local officials and not be driven by the transition rules relating to more efficient radios. Yet, under the Commission's December Order, no changes to an agency's contour can be made to a 25 KHz system after January 1, 2011, even though the real transition date is 2 years away.

A similar circumstance is presented with regard to the Commission rule precluding the manufacture or importation of 25 KHz equipment after January 1, 2011. During the course of daily operations an agency's equipment may be damaged, lost, or incapable of repair. Agencies budget for replacement of this equipment. Under the Commission's December 2004 rules, that replacement equipment will not be available. Notably, equipment will not be available even if the Commission grants waivers on an individual basis as no manufacturer is likely to invest in inventory dependent upon the waiver process. Neither rule will provide a greater incentive to move to 12.5 KHz technology; those efforts should be fully engaged by January 2011. What will result is the inability to adequately equip public safety officers.

NPSTC raises these concerns in the context of the Commission's request for comment regarding a finite date for a 6.25 KHz transition because the substantial challenges remaining with regard to the 12.5 KHz mandate should be resolved before another mandate is imposed.[4] The movement to more efficient technologies remains controversial, not because of the objective but because of the cost and planning required. NPSTC thinks it reasonable that an agency be committed through its planning and budget process to comply with the Commission's mandate of January 1, 2013 for 12.5 KHz. It is not reasonable; however, that, barring an individual waiver of the Commission's rules, an agency cannot expand its geographic coverage area or replace its 25 KHz equipment after January 1, 2011. Another mandate will dilute the significant embrace of the overall January 1, 2013 date and engender even further controversy. The Commission should resolve the remaining challenges associated with the transition to 12.5 KHz before issuing further mandates.

A Mandatory Date for Transition to 6.25 KHz Will Undermine Interoperability and Disrupt the Public Safety Sector

Fundamental to moving to more spectrally efficient technologies is the premise that operational elements, including coverage, reliability, and the features that comprise the system and which support the core mission, must not be compromised. NPSTC believes that until several operational issues relating to 6.25 KHz technology, the most significant being interoperability capability, are resolved, a mandatory date to transition to 6.25 KHz should not be established.

[4] NPSTC will submit an *ex parte* communication to the Wireless Telecommunications Bureau setting forth in greater detail the challenges the January 1, 2011 date presents and specific recommendations.

Technologies such as time division multiple access (TDMA) and amplitude companded single sideband (ACSSB) hold the promise of delivering more spectrum efficiency to the user. TDMA offers equivalent spectrum efficiency while ACSSB exceeds 6.25 KHz goals by offering 5 KHz efficiency. TDMA systems, however, cannot be used in a shared channel environment and tend to be more costly than necessary for small systems. ACSSB has sparse product availability making the ability to provide the same flexibility as 12.5 KHz FM or digital communications questionable. Neither technology is available as an open standard. Consequently, NPSTC believes requiring 6.25 KHz spectrum efficiency without widespread availability, use, and acceptance of equipment would be counterproductive to the Commission's objective.

As to interoperability, the Project 25 Phase II standard, when defined, holds the promise of 6.25 KHz spectrum efficiency and backward compatibility with the Phase I standard. Yet the 6.25 KHz standard is far from being defined at this time. NPSTC believes that interoperability between public safety users will suffer if non-standardized or discrete 6.25 KHz equipment is deployed prior to the emergence of an interoperability standard.

Technologies providing 6.25 KHz efficiency such as TDMA operate in the digital mode. While there is no evidence that a viable discrete 6.25 KHz channel product is imminent, future technologies designed to operate on 6.25 KHz discrete channels would also very likely be digital. For users to communicate with one another in the digital mode, an interoperability standard is necessary. Legitimate concern arises where non-standardized equipment is purchased from multiple vendors as users will probably not be

able to communicate with one another on the interoperability channels without the aid of some medium to act as an intermediary or gateway device.

The Commission's Notice inquires if 12.5 KHz software-defined radios would alleviate concerns about interoperability if reconfigured to 6.25 KHz radios. The central challenge, the lack of a 6.25 KHz standard, remains. Software-defined radios need standards in order to interoperate. Without a standard, there is no defined protocol with which to program a software-defined radio. Merely reconfiguring a radio through the use of software control does not necessarily yield a communications system that can operate with the requisite coverage, reliability, operational features, and configuration (conventional, trunked, simulcast). These elements are particularly crucial in the public safety environment and must be resolved with some high level of confidence. Including a software-defined radio in the system does not resolve these challenges. Ultimately the 6.25 KHz environment must be examined. Without operational efficiency and effectiveness, spectral efficiency alone is a hollow goal.

The Commission also inquires regarding the appropriate time to commence enforcement of Section 90.203(j)(5), the provision of its rules requiring equipment to meet the spectrum efficiency standard of 6.25 KHz. NPSTC believes that enforcement should be deferred until at least 5 years after a 6.25 KHz interoperability standard has been defined and published by the Telecommunications Industry Association (TIA) TIA and/or the American National Standards Institute (ANSI).

The Project 25 Steering Committee is currently evaluating 6.25 KHz technologies in order to define an interoperability standards suite. Its Steering Committee expects to finalize this determination in 2006. To give manufacturers time to develop equipment,

the Commission should stay the effective date of 90.203(j)(5) until approximately 5 years after the Project 25 Phase II standard has been defined and published by TIA and/or ANSI.

Staying the enforcement of this rule section does not prohibit manufacturers from developing and deploying equipment ahead of the deadline if they and their customers choose to do so, particularly on channels not associated with interoperability. NPSTC believes that operation on channels not designated for interoperability should be solely the decision of the licensee who is able to balance the benefits and risks. If manufacturers begin producing 6.25 KHz equipment sooner rather than later, NPSTC has no objection to deployment of 6.25 KHz efficiency systems. But before all public safety licensees are mandated to use 6.25 KHz equivalent efficiency equipment, an interoperability standard must be adopted and commercially available in equipment from a variety of manufacturers.

As the Land Mobile Communications Council (LMCC) noted in its Comments supporting the Joint Petition to Defer Enforcement of Section 90.203(j)(5), the rule now poses two problems for Part 90 end users. "First, end users purchasing new systems would obtain equipment that becomes outdated immediately after Project 25 standards have been completed. Second, equipment manufacturers would likely develop two sets of 6.25 KHz equipment – one hurriedly developed to comply with the Commission's deadline, and a second meeting Project 25 standards. Economies of scale in equipment research and development, then, are lost, and the cost of re-developing equipment will be passed on to Part 90 equipment seekers."

Conclusion

NPSTC believes that until the 12.5 KHz challenges are resolved and a 6.25 KHz interoperability standard emerges, no mandatory date should be established requiring 6.5 KHz spectral efficiency. Establishing a 6.25 KHz migration deadline without the availability of an interoperability standard would be counterproductive – minimizing interoperability, not maximizing it. The Commission should consider establishing a date for migration to 6.25 KHz spectrum efficiency 5 years after an interoperability standard has been defined.

Respectfully submitted,

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